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ABSTRACTS

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Coccidioidomycosis.—A case is reported of a thirty-three year old Negro who developed painless swellings over his body about a month prior to admission to Charity Hospital in New Orleans. This was followed by fever, night sweats, loss of weight and cough. He had been working for six months as a fruit handler in California. On admission, large fluctuant subcutaneous masses were present over the anterior and posterior chest surfaces, sacrum and left forearm. *Coccidioides immitis* was cultured from these abscesses. Roentgenogram of the chest revealed increased hilar shadows and mottled areas of increased density throughout both lung fields. The patient died six weeks after admission. At autopsy numerous sinus tracts were present leading into subcutaneous abscess cavities lined with necrotic membrane and associated in every case with a destructive lesion of bone varying from superficial erosions to extensive lesions. The lungs revealed single and conglomerate nodules especially in the upper lobes. On microscopic examination these were seen to be interstitial tubercle-like foci, some of which were proliferative, with epithelioid cells and giant cells in which most of the spherules of *C. immitis* were located, and others of which were exudative with central areas of necrosis, much polymorphonuclear infiltration, a variable amount of epithelioid reaction and spherules usually found free in the tissue. Intraälveolar lesions were also present. The lymph nodes revealed areas of both proliferation and necrosis. The liver showed foci of necrosis, and small lesions were present in the interstitial tissues of the renal cortex. Necrosis and cellular infiltration of the first thoracic vertebra were associated with the presence of numerous organisms many of which were of enormous size. Postmortem blood culture was positive for *C. immitis*, although several premortem cultures were negative. The organism was pathogenic for guinea pigs. Features of particular interest in the case were the similarity of the tissue responses to those of primary and reinfection tuberculosis, the apparent origin of the subcutaneous abscesses in bone lesions, the late systemic invasion of the blood stream, and the large size of the organisms seen in the bone. The view that local factors rather than itinerant patients are responsible is supported by the fact that man to man transmission has not been observed.—*Coccidiomycosis in States other than California, With Report of a Case in Louisiana, J. R. Schenken & E. E. Palik, Arch. Path., September, 1942, 34: 484.*—(*D. G. F.*)

Treatment of Actinomycosis.—The majority of observers reporting on the treatment of actinomycosis with sulfa drugs find these of great value, although high dosage and prolonged administration are necessary. Different authors have reported favorable results with sulfanilamide, sulfapyridine, "Cibazol," and a combination of various others. The recent literature contains only a few disappointing results, and these may have been due to inadequate dosage. The case reported in this communication is that of a forty-four year old farmer who developed pulmonary actinomycosis as a complication of actino-

mycosis of the jaw. The original source was probably dental caries. The disease could not be arrested, or even benefited, with potassium iodide and X-ray therapy. The patient was then treated with "Irgamid" (N_1-dimethyl-sulfanilamid). The dosage was 6 g. daily, and a total of 556 g. was given. There were no untoward effects as a result of the chemotherapy. The sinuses of the jaw were treated locally with a 20 per cent solution of the same drug, and a total of 12 g. of the drug was used in this local treatment. The patient became afebrile after five days of chemotherapy, the sinuses on the chin healed slowly and there was a gradual improvement in the X-ray picture. Actinomyces disappeared from the sputum, and the sedimentation time became normal. Thirteen weeks after the start of chemotherapy the patient was discharged. At that time the X-ray picture was not entirely clear, but it showed marked improvement. The patient was last seen seven months after discharge. He was clinically well and doing a full day's work. The X-ray picture was compatible with a probably arrested case of actinomycosis.—*Über einenmit Irgamid (N_1-Dimethyl-Sulfanilamid) geheilten Fall von Aktinomykose der Lunge, C. Merkle, Schweiz. med. Wchnschr., October 2, 1943, 73: 1230.*—(*H. M.*)

Actinomycosis of Chest.—The older literature indicates a poor prognosis for actinomycosis of the chest. In the last five years there have been several reports of the successful treatment of actinomycosis with sulfonamides, usually sulfanilamide or sulfapyridine. The present report deals with a case of actinomycosis of the chest with spread to the retroperitoneal space that was successfully and rapidly cured with sulfadiazine. The disease was of sixteen months' duration prior to sulfadiazine therapy.—*Actinomycosis of the Chest with Spread to the Abdomen, W. E. Ladd & A. H. Bill, Jr., New England J. Med., November 11, 1943, 229: 748.*—(*J. B.*)

Candida Albicans Infection.—A case is reported of a thirty year old white male infected with *Candida albicans*. The history, of eight years' duration, began with small white spots in the mouth later becoming red, bleeding and painful. After three years a biopsy specimen was examined and diagnosed as tuberculosis. The oral lesions became worse, involving most of the interior of the mouth as well as the soft palate, uvula and epiglottis in a chronic granulating process; there was occasional cough, sore throat and easy fatigability. Following a generalized treatment with ultraviolet rays he developed uveitis and iritis. The right eye later showed chemosis and oedema of the conjunctivae, opacity of the cornea, shrinkage and complete loss of vision. A diagnosis of panophthalmitis was made and the eye was enucleated. Sections revealed a chronic and acute granulomatous process involving all coats and no tubercle bacilli. Another biopsy from the mouth showed a similar process. Material from the mouth was negative for tubercle bacilli on smear and animal inoculation. The condition of the patient remained apparently unchanged for four years after which time he developed severe frontal headaches followed in a few weeks by lethargy, fever, generalized myalgia, weakness and stupor. On examination he was emaciated, with stiff neck, absence of deep reflexes, fixed pupil and papilloedema. The spinal fluid was under increased pressure with 117 cells, mostly mononuclears; the Pandy test was positive and the sugar very low. A guinea pig inoculated with the fluid did not develop tuberculosis. The patient finally died in coma. At autopsy the surfaces of the mouth were thick and granular with a deep ulceration of the lower lip. The region of the left vocal fold was granular and gray. Sections of these areas revealed tubercle formation with numerous epithelioid and giant cells. Mycelial threads and blastospores were readily identified on proper staining. The lung showed scattered patches of bronchopneumonia but no tubercles or caseation. The brain revealed a few minute sandy nodules over its upper surfaces but its base was covered with a thick stringy exudate containing a few tubercle-like nodules.

Slender mycelia having a beaded appearance on Gram strain were found in this area. Translucent grayish masses covering the ependymal surfaces of the ventricles were found to consist of huge collections of fungous elements. Restudy of the enucleated right eye revealed fungi of the same type. On culture, the fungus was identified as *Candida (Monilia) albicans*. This is apparently the second reported case of meningitis due to this organism; ophthalmitis of fungous origin is also extremely rare. Mycosis should be considered in all cases of apparently non-specific granuloma.—*Candida Albicans Infection Confused with Tuberculosis, J. B. Miale, Arch. Path., March, 1943, 35: 427.—(D. G. F.)*

Pulmonary Infarction and Atelectasis.—A case is reported of a fifty-six year old woman who died fourteen days after a colostomy was performed for a carcinoma of the sigmoid. A postmortem teleroentgenogram revealed across the lower third of the right lower lobe of the lung a linear shadow which had not been present nineteen days before, and which was interpreted as a postoperative plate-like atelectasis. At autopsy infarcts were present in the upper portions of the right upper and lower lobes. In addition, dark red depressed linear areas were present across the lower third of the right lower and on the antero-medial surface of the right middle lobes. These areas could not be inflated. They extended for a distance of 3 cm. into the parenchyma, and on microscopical examination showed necrosis and haemorrhage characteristic of recent infarction, probably one to two weeks old. This appears to be a case in which an infarct developed in a preëxisting focus of plate-like atelectasis. Infarcts have often been found in atelectatic lobes though no causal relationship has ever been proved. The case presented offers more definite evidence of such relationship, but it is not suggested that atelectasis has any part in the development of the usual pulmonary infarct.—*Pulmonary Infarction and Atelectasis: Report of a Case Presenting Evidence of a Causal Relationship, B. Castleman, Arch. Path., February, 1943, 35: 299.—(D. G. F.)*

Postoperative Atelectasis.—Pulmonary ventilation is impaired in postoperative patients. Bronchial secretions are not expectorated sufficiently and may occlude a bronchus. Atelectasis is the consequence and bronchopneumonia and abscess may follow. In order to prevent these complications it is advised to operate patients suffering from bronchitis or sinusitis in Trendelenburg position at an angle of 15 to 20 degrees. If there is mucus in the bronchi after an operation it should be aspirated. Administration of carbon dioxide is suggested. If atelectasis is present, the patient is advised to change his position; he is encouraged to cough. Bronchoscopic aspiration or aspiration with ureteral catheters should finally be done. In a patient who after an intrathoracic operation was unable to cough, tracheal aspiration was performed twenty-five times within three weeks.—*Aspiration des sécrétions bronchiques dans les interventions chirurgicales, F. Hudon, Laval méd., October, 1943, 8: 567.—(G. C. L.)*

Reflex Atelectasis.—Atelectasis of the lung has long been understood to be caused by the retention of bronchial secretions with consequent obstruction of the bronchial lumen. In 1879 Lichthein demonstrated that atelectasis of the lung depends upon obstruction of the bronchus for a longer period than four hours. The air contained in that portion of the lung corresponding to the obstructed bronchus is then absorbed and the lung assumes a foetal appearance. Bronchial obstruction no doubt explains the atelectasis that occurs postoperatively and in many cases of bronchopneumonia and pneumonia, but some cases of atelectasis can be explained only on a purely reflex basis. The bronchi, according to Luisada, show a rhythmical muscular contraction synchronous with the respiratory movements. Inspiration is an active phenomenon and expiration a passive phenomenon in reference to the chest wall; but in respect to the lung itself, expiration is an

active phenomenon since contraction of tissue and of the bronchi actively expels air from within the lung. These functions of expansibility and contractability of the parenchyma of the lung are regulated by the vegetative nervous system, with the parasympathetics in control of the contractile capacity and the sympathetic nervous system in control of the opposite function. There are sensitive nerve endings in the alveoli which influence the production of atelectasis by active contraction of the lung. These experimental observations and theories are supported by clinical findings in 3 patients. The first of these was a man fifty years of age of a predominantly vagotonic type. In an automobile accident he suffered fractures of three ribs on the right side. On the left side, in which was seen no apparent external injury, there was nevertheless atelectasis of the lower lobe of the lung. The elapsed time between the accident and clinical and roentgenological demonstration of the atelectasis was not sufficient to support the possibility of its being due to retained bronchial secretions. Furthermore, after the administration of belladonna the atelectasis cleared completely. The second patient had pneumonia involving a portion of the lower lobe of the left lung and subsequently developed total atelectasis of the right lung. It is believed that this too occurred because of reflex collapse of the alveoli. In the third patient bilateral atelectasis of the lower lobes developed in an individual with bronchitis and possibly bronchiectasis. It is possible in this latter case that retained secretions contributed in part to the development of the atelectasis. Atelectasis caused by reflex spasm of the bronchi necessarily explains those cases of atelectasis which occur without bronchial obstruction. It is believed that many cases of postoperative atelectasis are caused by reflex bronchial spasm.—*Atelectasias reflejas, Dr. Parada, Rev. españ. de tuberc., May, 1943, 12: 292.*—(*A. A. E.*)

Pulmonary Lesion in Weil's Disease.—Specific pulmonary lesions have not been described in this disease to date. However, 3 out of 11 cases which were observed in Switzerland during the past eight years showed pulmonary lesions which were considered sufficiently characteristic to be attributed to the disease itself. All 3 of these cases recovered and autopsy findings are, therefore, not available. The pulmonary lesion seems to develop between the fifth and the twelfth day of the onset of the illness. Bloody sputum was present in one case, but the other patients exhibited no special symptoms referable to the lungs, and the X-ray findings were accidental. The physical signs are scant and consist of an occasional dry râle. Roentgenologically the lesion is represented by patchy consolidations in the central portions of both lungs and in the neighborhood of the cardiac outline. The hilar shadows are enlarged. The sputum does not contain spirochetes. Careful studies of the blood in regard to bleeding, clotting, and prothrombin time did not reveal any bleeding tendencies, so that the argument that the X-ray findings may be due to nonspecific pulmonary haemorrhages is not valid. In a fourth case, which ran an acute course of one week, pulmonary haemorrhages were found at autopsy, but the distribution of the lesions was basal and entirely different from the X-ray findings in the 3 first mentioned cases.—*Lungeninfiltrate beim Ikterus infectiosus Weil, S. Moeschlin, Schweiz. med. Wchnschr., October 2, 1943, 73: 1227.*—(*H. M.*)

Bronchiectasis.—Lobectomy or pneumonectomy was done in 76 patients with primary bronchiectasis. The operative procedure is described and the results are discussed. In 24 patients with lower lobe or lower lobe and lingula disease there was one death (4.2 per cent). In 26 patients in whom one lobe was removed but disease was present in other lobes there were 4 deaths (15.4 per cent). In 17 patients in whom two or more lobes were removed there were 3 deaths (18 per cent). In 9 patients in whom pneumonectomy was performed there were 4 deaths (44 per cent). The mortality in patients with untreated bronchiectasis is 35 per cent.—

The Surgical Treatment of Bronchiectasis. A Report on 76 Patients, H. H. Bradshaw & J. F. O'Neill, Surg., Gynec. & Obst., September, 1943, 77: 315.—(*G. C. L.*)

Silicosis.—The diagnosis of silicosis has been confirmed by demonstration of silica in the sputum and blood of 40 individuals. Silica which is conveyed to the lungs by inhalation is taken up in greater part by the lymphatics and the remainder is expectorated. Silica interferes with the lymphatic circulation, producing a fibrous proliferation which eventually results in the inclusion of the particles themselves. But before this occurs the silica which is inhaled passes through the blood and may be excreted in the urine. Silica may normally be found in the blood but if the quantity is less than 8 mg. per cent as determined by the colormetric method it is believed to be of no clinical significance. Quantities from 12 to 20 mg. per cent are expressed as 1 plus, from 20 to 50 mg. per cent 2 plus, and above 50 mg. per cent 3 plus. Positive chemical reactions for silica in the sputum may be obtained in all cases of silicosis. The positive reactions in the blood correspond to the amounts of silica contained in the sputum and positive chemical reactions are found only in those individuals who have been exposed to silica-bearing dust. The specific chemical reaction used is that described by Oberhauser and depends on the reaction obtained with nitromolybdenate of ammonia. This may be used equally on the blood and sputum and is a more certain test than the spectrographic methods.—*Contribucion al diagnostico de la silicosis pulmonar por la investigacion de la silice en la sangre y en la expectoracion, H. Oyanguren & E. Bartholin, Rev. méd. de Chile, May, 1943, 71: 464.*—(*A. A. E.*)

Hydatidosis.—Osteolytic pseudo-abscesses involving the ribs may be caused by hydatid infection. Two such cases are reported in which the hydatid cyst encroached upon the interior of the thorax, producing a diagnostic problem because of their similarity to tumors of the lung. The principal feature in a differential diagnosis is the calcification of the wall of the cyst. Radiographically such hydatid cysts present a completely opaque shadow and it is only by means of radiograms with greatly increased penetration that the calcified wall of the cyst can be demonstrated.—*Hidatidosis extraosea a exteriorizacion endotoracica, C. I. Rivas & C. Morel, Rev. Asoc. méd. argent., May, 1943, 57: 239.*—(*A. A. E.*)

Lipoid Pneumonia.—Ten patients who had a history of receiving liquid petrolatum for many years and who had suggestive roentgenograms pointing toward the diagnosis of lipoid pneumonia were investigated by means of aspiration biopsies. The roentgenographic studies showed the pulmonary lesions confined to the mesial portions of the lower lobes of both lungs and particularly to the lower lobe of the right lung. Positive findings were obtained in 5 cases. Histological changes as found by biopsy are: droplets of liquid petrolatum are taken up by monocytic cells. These cells have a foamy appearance. The nucleus is pressed toward the periphery by the fat. Giant cells and fibrosis are also found. The cells disintegrate and the oil becomes entrapped in the meshwork of the fibrous tissue. The positive smear can be regarded as diagnostic. A negative smear does not rule out the diagnosis. Untoward effects were noticed in one patient only who had a slight haemoptysis.—*Diagnosis of Lipoid Pneumonia by Aspiration Biopsy, L. Nathanson, D. Frenkel & M. Jacobi, Arch. Int. Med., November, 1943, 72: 627.*—(*G. C. L.*)

Lipid Granulomatosis of Lung.—A case is reported of a fifty-two year old male with chronic cough and clubbing of the fingers. Bronchography with 10 cc. of 40 per cent iodized poppyseed oil revealed an occlusion of the right upper lobe bronchial orifice by tumor, later proved to be squamous cell carcinoma, and the oil ran into the right middle and lower lobes. The right lung was resected one month later, and in addition to the neoplasm there were numerous small firm nodules

scattered beneath the pleura and through the parenchyma of the middle and lower lobes. These were firm, brown or gray-brown, and were sharply circumscribed; microscopically they consisted of groups of structures resembling tubercles with a central core of lipophages and epithelioid cells, or fat globules often with a giant cell of foreign body type stretched over the periphery. The fat stained orange-red with Sudan IV and black with osmic acid; the Ziehl-Neelsen stain revealed no acid-fast substance such as is seen in codliver oil pneumonia. This is an unusual case of granulomatous reaction to iodized poppyseed oil instilled into the lung. The mechanical factor of bronchial obstruction by tumor may have played a rôle in this case as well as in one similar case reported in the literature, but the short time elapsing between instillation of the oil and the reaction suggests that other factors may be involved especially in view of the fact that this oil has been demonstrated in the lung for longer periods without similar reaction.—*Focal Lipid Granulomatosis of the Lung following the Instillation of Iodized Poppy-Seed Oil, H. Brody, Arch. Path., May, 1943, 35: 744.*—(*D. G. F.*)

Cystic Disease in Children.—During the last ten years pulmonary cystic disease was studied in 12 boys and 5 girls between the ages of two days and seven years, 5 in Mulattoes, none in Negroes. Ten children were under ten years of age, 5 between two and three years and 2 more were six and seven years, respectively. Six children died and 3 autopsies were obtained. No positive family history of tuberculosis was found except in one case, and the serological test for syphilis was negative in all cases. In one case a single giant cyst was present while in the remaining cases multiple cysts were found. The cysts were located in 6 cases in the right lung alone, in one case in the left and in 10 cases in both lungs with predominant involvement of the right lung in 6 and of the left lung in 2 cases. Clinical symptoms consisted of repeated attacks of catarrh with more or less marked bronchitis in 15 cases and with evidence of pericystic bronchopneumonia in 10 cases. In some cases repeated episodes of bronchopneumonia developed, while in others the clinical picture was that of a chronic bronchopneumonia. In 3 cases there were signs of cavitation and in 5 those of a partial or total pneumothorax. Paroxysmal suffocation, cough with dyspnoeic crises and with transient or lasting cyanosis were present in 12 cases. In 13 cases fever of varying degree occurred at different stages of the clinical course. While only 7 children showed a slight anaemia with moderate paling of the red blood cells, the red blood count was normal in others except for some increase during the crises of suffocation. In most cases there was a slight leucocytosis with a high neutrophil count. Haemoptysis occurred in one case, marked loss of appetite was present in 6, convulsions in one and inflammatory conditions of the upper respiratory tract in 6 cases. Congenital anomalies of extrapulmonary organs were not found. With the exception of 2 cases in which the diagnosis was made at autopsy without preceding roentgen examination, in all the other cases gaseous cysts were seen on radiograms. Bronchography was practiced in 5 cases and revealed marked underdevelopment of the regional large bronchi; only in one case the cysts were filled by ordinary bronchography. In 2 cases transpleural injection allowed to fill and outline the cysts. Tomography was applied in 2 cases and confirmed in one case the previously noted cyst formation and revealed in the second case the presence of several cysts not seen on previous routine roentgen examination. By serial radiograms at long time intervals, marked changes of the cystic volume were noted. In some cases there were opacities and shadows surrounding the cysts which were interpreted as pericystic inflammatory reaction. In 3 cases an increase of the positive intracystic pressure was found by manometric tests. Secondary infection of the cysts was observed in 13 cases, rupture of the cyst into the pleura with subsequent pyopneumothorax in one case, acute pulmonary emphysema in various regions of the involved lung in one case,

marked mediastinal shift in 4 cases and a minor haemoptysis in one case. Clinical symptoms developed in one case a few hours after birth, from three months to one year in 9 cases, from one to two years in 2 cases and at six years in one case. In the remaining cases it was not possible to determine the exact date of the beginning of the symptoms. In 2 cases marked improvement was noted; 7 children remained stationary with temporary improvement. The duration of observation in these children was too short and incomplete. Two children were taken home without evidence of improvement and 6 children died. The authors feel that cystic disease of the lungs is a congenital malformation due to parenchymo-bronchial underdevelopment of the mesoderm, the involved region of the lung remaining in the fetal state described as canalicular state by Dubreuil. The pulmonary tissue consists of respiratory bronchi and alveolar canals that undergo, following birth, a process of dilatation with scarce, if any, formation of alveoli. The underdevelopment explains the small calibre of the bronchial divisions and the ease with which valvular mechanisms are produced resulting in the distension of the alveolar canals and forming gaseous cysts in variable intervals. At autopsy the authors did not find the predominating bronchial hyperplasia with proliferation of the mucous membrane in great folds as described by Hutinel and other French authors. On the contrary underdevelopment of both the bronchi and of the parenchymal tissue was noted. Pulmonary cysts are always multiple, even when there seems to be radiographically only one cyst. The onset of clinical symptoms and signs is quite variable: of these, dyspnoea with recurrent suffocating crises is quite characteristic. The form of chronic repeated catarrhal bronchitis is also frequent. As age is more advanced suppuration and abscess form. Haemoptysis is rare in children. Bronchography and tomography are essential for securing a correct diagnosis. Prognosis is always unfavorable, more so in children. Death occurs quite frequently after a more or less accidental course of the disease. Sulpha drugs and derivatives are of some use in the treatment of secondary infection of the cysts. The only curative treatment is surgical intervention either by lobectomy or pneumonectomy according to the extent of the lesions. There seems to be barely a connection between cystic disease of the lungs and bronchiectasis; both conditions are entirely different from each other. Cystic disease is a congenital malformation, while bronchiectasis develops in primarily normal bronchial structures subsequent to atelectasis.—*Enfernedad quistica del pulmon en la infancia: estudio anatomo-clinico y radiologico sobre 17 observaciones, T. Valledor, E. Martel, R. Fuste & A. F. Baltrons, Rev. de tuberc. d. Cuba, April-June, 1943, 7: 147.*—(*F. G. K.*)

Triangular Paramediastinal Shadows.—The most frequent lesions causing a triangular shadow at the left or right base of the lung-fields are mediastinal pleurisy, atelectasis, bronchiectasis, pneumonia and bronchopneumonia. Triangular shadows are furthermore observed in a variety of lesions such as mediastinal or paramediastinal tumors, retrocardiac aneurysm of the aorta, dilatation of the oesophagus, paravertebral abscess, scoliosis, inflammatory pericardial diverticula, abnormal contour of the vena cava, epipericardial fat and abnormal relationship between the medial diaphragmatic leaf and the cardiac shadow. Often the correct diagnosis can only be established by the combination of clinical, laboratory and radiographic examinations such as bacteriological tests of the sputum, tuberculin reaction, serial radiographies, bronchoscopy, bronchography, manometric exploration of the pleural space or only by the help of a thoracocentesis. Lobar or segmental atelectasis can usually be diagnosed by the dense shadow with a concave hypothenuse, with homolateral inspiratory shift of the mediastinum and, in the case of a large triangular area, by paradoxical movement of the diaphragm. Bronchiectases may present a homogeneous density or shadows with interspersed translucent areas. There is usually a homolateral displacement of the mediastinum

with the outer border either straight or concave. A diagnosis of lobitis of a cardiac lobe should always be made with reserve because of the great similarity with an atelectasis of the inferior lobe. In ordinary pneumonia with the typical contrasting brightness of the bronchial markings there is usually no mediastinal shift or only a slight contralateral deviation. In paravertebral bronchopneumonia the shadow is generally cuneiform, nonhomogeneous and rather ill defined and often associated with additional broncho-pneumonic lesions in the apico-medial segment of the lower lobe. In mediastinal pleurisy the diagnosis depends on the involved structures. In mediastino-diaphragmatic pleurisy there is a dense shadow with contralateral mediastinal displacement with a convex hypothenuse. The triangle enlarges on inspiration according to the movements of the diaphragm contrary to those of the ribs. In costo-mediastinal pleurisy there is a homogeneous shadow with none or only slight homolateral shift of the mediastinum and with a concave hypothenuse. The shadow remains unchanged on inspiration. In the anterior type of pleurisy the shadow follows the heart in any position of the patient and in the posterior type the shadow cannot be separated from the spine. Mediastinal interlobar pleurisy can be either anterior or posterior; there is either homolateral mediastinal shift or none at all. The outer contour is ill delineated and on the lateral film the shadow is like a band or streak-like. The interpretation of paramediastinal triangular shadows is often very difficult. The shadow is a morpho-radiological representation of various lesions, the exact nature of which can only be determined by making use of all clinical and laboratory exploratory methods.—*Las ombras trinagulares para-mediastinicas de la base, R. G. Mendoza, Rev. de tuberc. d. Cuba, January-March, 1943, 7: 49.*—(*F. G. K.*)

Bronchoscopy and Asthmatoid Respiration.—Altered respiration of an asthmatoid type may result from a variety of clinical conditions which produce changes in the calibre of the bronchial lumen. The term is used to imply a type of respiratory cycle in which the expiratory phase is accompanied by a wheezing sound similar to that heard in true bronchial asthma but for which there may be a number of different aetiological factors. The author illustrates his report with 8 case histories which indicate the diagnostic and therapeutic value of bronchoscopy in simulated asthmatic breathing. A pathological process which narrows or partially blocks the bronchial lumen, coupled with the physiological shortening and contraction of the bronchi during expiration, probably combine to produce an abnormal vibration of the outgoing air during expiration, with a resultant altered expiratory sound which is most often wheezing in character. Endoscopic investigation is warranted in any case of atypical bronchial asthma which does not respond readily to diagnosis and therapy.—*Bronchoscopy and Asthmatoid Respiration, Capt. S. A. Friedberg, J. A. M. A., September 11, 1943, 123: 85.*—(*G. L. L.*)

Morphine in Asthma.—Within five years 10 patients with bronchial asthma died at the Groote Schuur Hospital. In 3 cases morphine contributed to the patient's death. In 6 cases there is a similar possibility, but the evidence is only suggestive. In only one of the 10 cases was no morphine prescribed. Morphine is definitely contraindicated in bronchial asthma.—*The Danger of Morphine in Asthma, J. F. Brock, Clin. Proceedings, Cape Town, August, 1943, 2: 222.*—(*G. C. L.*)

Pleural Adhesions.—Fibrous pleural adhesions were found in 264, or 66 per cent, of 400 unselected autopsies, the incidence increasing with age. Of 49 patients with past histories of pneumonia or pleurisy, 94 per cent showed fibrous adhesions and the average area of pleura involved was at least twice as great as in the other cases. In 4 cases with advanced tuberculosis or bronchiectasis, the adhesions were obviously related to the inflammation. No special relationship was demonstrated between these adhesions and latent tuberculosis, as evidenced by calcified nodules and apical

scars. Most of the adhesions were present over the posterior portion of the lungs; the lower parts were more frequently involved than the upper. The findings suggest that these fibrous adhesions are associated with pulmonary inflammations, many of which may have been overlooked clinically or forgotten, and the predisposing condition may leave no permanent change other than the adhesion. The majority of the fibrous adhesions were found over essentially normal lung tissue.—*Fibrous Pleural Adhesions, E. B. Smith, Arch. Path., April, 1943, 35: 553.*—(*D. G. F.*)

Nontuberculous Empyema in Children.—Rib-section with open drainage is the method of choice in treating *empyema thoracis* in children. Since the advent of the sulfonamide drugs the use of the fluoroscope is necessary to determine the proper time for this procedure. This is true because other criteria, such as the character of the pus, leucocyte counts and temperature range, are not reliable guides when the sulfonamides are employed. With the aid of the fluoroscope the exact position of the empyema can be established and it can be seen whether or not localization has occurred. A study of 184 cases of empyema before and since the use of sulfonamides reveals the following observations: (*1*) The incidence of the disease varies from year to year and is apparently uninfluenced by their use; (*2*) there is a greater incidence of localized types of empyema; (*3*) streptococcic and staphylococcic varieties are not as serious as formerly; (*4*) the stay in the hospital is prolonged; (*5*) complications are less frequent; (*6*) of 167 cases treated with rib-resection, 5 (2.9 per cent) died.—*Nontuberculous Empyema Thoracis in Children, J. K. Berman, Surg., Gynec. & Obst., February, 1943, 76: 183.*—(*G. C. L.*)

Myocarditis in Bronchiectasis.—Myocarditis occurs more often in bronchiectasis than in uncomplicated pneumonia. Among 6,257 patients who came to autopsy, bronchiectasis was found in 152. Of these 152, 8 had myocarditis. There were 3 females and 5 males. Their age was between five weeks and seventy-seven years. During life myocarditis was diagnosed in only one instance. At autopsy, myocarditis was not found on gross examination. Histological examination showed recent myocarditis in 3 cases; recent myocarditis with myocardial fibrosis due to coronary sclerosis in one case, with heart aneurysm in one case; subacute myocarditis in one case; chronic myocarditis in 2 cases. Bacteria were found in the myocardium of only one case. The most significant clinical observation in these patients was a discrepancy between the relatively slight elevation of temperature and the high pulse rate. Careful histological examination of the myocardium from 3 patients who had died from bronchial asthma revealed myocarditis in one case.—*Myocarditis in Bronchiectasis, O. Saphir, Arch. Int. Med., December, 1943, 72: 775.*—(*G. C. L.*)

Reaction of Lung to Toxins.—Intravenous injection of rabbits with diluted staphylococcus toxin produced diffuse microscopical pulmonary lesions. Animals which died in less than thirty minutes showed extensive oedema, some haemorrhage and considerable infiltration of interstitial tissue and perivascular lymphatics with polymorphonuclear as well as some mononuclear cells. Animals which died or were killed within twenty-four hours revealed lesions in which either haemorrhage or interstitial cellular infiltration predominated. After two days the mononuclear cells were more numerous, and after three days or longer filled the lymphatics and were present as focal accumulations in the tissue. Examination of human autopsy material revealed numerous examples of similar change, but in only 5 of these could complicating factors be excluded. In these cases, which included 2 cases of otitis media, and one each of mastoiditis with meningitis, puerperal infection and peritonitis, it was felt that the pulmonary lesions could be attributed to a toxaemia. These findings indicate that the lung may be damaged as a result of a toxaemia

originating from a focus of infection even in the absence of bacteraemia; such damage may result in a lowering of the pulmonary resistance with resultant secondary bacterial infection.—*Reduction of Pulmonary Resistance to Infection by Circulating Toxins, D. H. Sprunt & W. Camalier, Jr., Arch. Path., November, 1942, 34: 801.*—(*D. G. F.*)

Ossification in Lungs.—A case is reported of a thirty-four year old woman with long standing mitral stenosis who became somewhat decompensated in the seventh month of pregnancy. She was treated with rest in bed and digitalis and finally delivered by caesarean section. She developed râles postoperatively together with a high temperature and died the following day. At autopsy the lungs showed a diffuse acute haemorrhagic bronchopneumonia. Minute plaques of ossification were present in the visceral pleura over all the lobes and occasional branching deposits were present throughout the parenchyma. The general appearance of the lung was one of chronic interstitial pneumonitis with ossification rather than the usual fibrosis seen in chronic passive congestion. It is possible that conditions favorable for ossification occur in chronic interstitial pneumonitis only when pulmonary congestion is superimposed, since there is evidence to show that venous stasis favors bone formation if other necessary conditions are also present. Only about 45 cases of diffuse pulmonary ossification not associated with tuberculous scars have been reported in the literature, the large majority being of the branching type seen almost exclusively in aged men. The present case is one of the circumscribed nodular type seen in relatively young persons with mitral stenosis.—*Disseminated Ossification of the Lungs, H. G. Wells & C. E. Dunlap, Arch. Path., March, 1943, 35: 420.*—(*D. G. F.*)

Pulmonary Osteoarthropathy.—Four cases of pulmonary carcinoma with pulmonary arthropathy are reported. A forty-five year old man with a carcinoma of the left upper lobe had the appearance of a patient with acromegaly, tufting of the terminal phalanges of the fingers and toes. Necropsy showed atrophy of the testicles and hypertrophy of the pituitary with extensive proliferation of the eosinophilic cells. A sixty-one year old female with a squamous cell carcinoma of the lung showed changes which are characteristic in acropachyderma with pachyperiostosis. In a fifty-five year old female with a carcinoma of the right lower lobe, myxedema, pulmonary osteoarthropathy, hirsutism, the autopsy revealed hyperplasia of the anterior lobe of the pituitary with eosinophilic cells in the majority and adenomata in one adrenal and in the thyroid. The necropsy findings in a forty-one year old man with carcinoma of the right lower lobe and chronic pulmonary osteoarthropathy were hypertrophy of the pituitary and hyperplasia of the eosinophilic cells of the anterior lobe, several adenomata in the adrenals and enlargement of the thyroid. It is believed that diffuse osteoarthropathy found in neoplastic diseases of the lungs is due to endocrine disturbances similar to acromegaly and to pachydermia with pachyperiostosis.—*Chronic Pulmonary Osteoarthropathy. Dyspituitarism as a Probable Cause, B. M. Fried, Arch. Int. Med., November, 1943, 72: 565.*—(*G. C. L.*)

Classification of Psittacosis-like Agents.—There is a group of viruses which resembles the agents of psittacosis and, like them, produces minute coccoid elementary bodies and causes pneumonia in mice following intranasal inoculation. This group of antigenically related agents includes strains isolated from human beings, birds, ferrets and mice. The present paper has to do with a study of these relationships by means of experiments on pathogenicity and cross immunity. The strains of virus studied include a human strain (strain S-F), isolated from the spleen and lungs of two fatal cases of atypical pneumonia; psittacosis strain 59 isolated from parakeets considered representative of the virus isolated from parrots in general; psittacosis (ornithosis) strain 134 isolated from pigeons; meningopneumonitis strain MP-F97 isolated from

parrots which had received human throat washings, lymphogranuloma venereum strain LGV-St., and a mouse pneumonia strain. Animal and bird inoculation, tests for latency of infection, cross immunity tests in mice and complement fixation tests were performed employing these agents. Certain differences were found between the strain S-F (human atypical pneumonia) and the ornithosis (pigeon) virus. The former can be distinguished from the latter by its lower virulence for birds and from psittacosis by its failure to kill mice or produce significant lesions when inoculated intraperitoneally. This strain also seems to have less tendency to latency in mice or birds than do the strains of avian origin. Furthermore, the strain S-F is not antigenically identical with either ornithosis or psittacosis by the cross immunity method used in this laboratory. Ornithosis and meningopneumonitis viruses have a much broader antigenic structure, since they produce complete immunity against themselves and all other strains tested. The strain psittacosis contains an antigen which develops solid immunity for itself and type strain S-F, but very little for meningopneumonitis or ornithosis. Strain S-F has a still smaller range in that it immunizes only against itself (intracerebral inoculation). This difference is not evident when the challenge inoculation is given by the intraperitoneal route. From the evidence it would appear that the psittacosis-like viruses causing atypical pneumonia in man may be classified into three groups: psittacosis, ornithosis and human pneumonitis (strain S-F) of undetermined origin.—*Further Laboratory Studies on the Classification of Psittacosis-like Agents, M. D. Beck, M. D. Eaton & R. O'Donnel, J. Exper. Med., January 1944, 79: 65.*—(*J. S. W.*)

Ligation of Vein for Thrombophlebitis.—The danger to life of thrombophlebitis arises from the development of pulmonary infarctions. Approximately 1 in 4 cases of pulmonary embolism is associated with clinical evidence of thrombophlebitis, and similarly approximately 1 in 4 cases of thrombophlebitis is associated with evidence of embolism. It has been shown that about 50 per cent of patients having fatal pulmonary embolism had had previous episodes of nonfatal pulmonary infarction or clinically recognized thrombophlebitis and 19 per cent of those having nonfatal pulmonary episodes subsequently developed fatal pulmonary embolism. Thus, for a patient with a pulmonary infarction caused by an embolus from thrombophlebitis, there is a real danger to his life and therapeutic measures may justifiably be radical. Despite the favorable reports on the use of heparin and dicoumarin it is believed that greater success can be achieved by surgical procedures which isolate the site of embolus formation from the general circulation. The case report of a soldier evacuated from a malarial infested South Pacific island is given. A pulmonary infarct had occurred at least six weeks before he was admitted to the hospital and, from the history, it appears that this infarct occurred at least five weeks before the subjective symptoms of thrombophlebitis. There is nothing to explain the aetiology of the latter, no operation, no known trauma. He had been fighting under severe living conditions and probably had malaria for which he had been receiving quinine. On admission the patient had an extensive thrombophlebitis involving the upper portion of the left femoral and internal saphenous veins, and the whole of the left external and common iliac veins and a history of at least 2 episodes of pulmonary infarction. Strangely enough there was almost no oedema of the leg and no evidence of arterial spasm. A preliminary operation showed that the thrombus reached all the way up to the vena cava, the vein being hard and oedematous. The vena cava was not involved. The left iliac vein was, therefore, ligated at its junction with the vena cava and below this after having been incised longitudinally for removal of clot between these points. The patient made an uneventful recovery and two months later was fully ambulatory, the minimum swelling of the left leg being checked by means of an elastic bandage. The slight oedema did not increase

after the operation as the veins had already been completely obliterated. The authors consider the ligation of the vein above the sight of thrombophlebitis a more logical and effective measure than the administration of anticoagulants and show that it can be done at a place usually considered out of reach.—*Successful Ligation of the Left Common Iliac Vein for Thrombophlebitis Complicated by Pulmonary Emboli, Major R. T. Shackelford & Captain R. Whitehall, Bull. Johns Hopkins Hosp., November, 1943, 73: 307.*—(*J. S. W.*)

Mediastinal Emphysema.—The case history of a twenty-eight year old man is given who, about an hour after having lifted a patient, developed substernal pain. The pain became so severe that the patient had to receive morphine. On physical examination a crunching sound was heard over the heart. A roentgenogram revealed a partial pneumothorax at the left apex. Electrocardiograms and stethograms taken simultaneously showed that the crunching sounds were synchronous with each contraction of the heart.—*The Phonocardiogram in Spontaneous Interstitial Emphysema of the Mediastinum, A. M. Hoffman, F. W. Pobirs & R. Merliss, Am. Heart J., November, 1943, 26: 686.*—(*G. C. L.*)

Hodgkin's Disease.—The slides of 186 out of 225 cases of microscopically verified Hodgkin's disease were studied and a detailed analysis of the architecture, individual cellular components and stroma of the Hodgkin's lymph node is presented. It was found that in the great majority of cases there is sufficient uniformity in the several sections of one lymph node or in several simultaneous biopsies from varying sites to warrant the characterization of each case upon the basis of histology. Based on the analysis of this material, the following strict pathological nomenclature is suggested. *I.* Hodgkin's lympho-reticuloma $\left\{\begin{matrix}\text{Typical}\\\text{Atypical}\end{matrix}\right.$ This group is to comprise the cases whose biopsies show a prevalence of reticulum cells or frequent mitoses, or both. Large or medium sized lymphocytes when associated with frequent mitoses have a significance analogous to the reticulum cells; hence the inclusion of "lympho" in the term lympho-reticuloma. *II.* Hodgkin's granuloma. This group is to represent the bulk of the cases with typical features of pleomorphism, Sternberg-Reed cells and a moderate degree of fibrosis. *III.* Hodgkin's lymphoma $\left\{\begin{matrix}\text{Typical}\\\text{Atypical}\end{matrix}\right.$ This group is to consist of those cases whose biopsies show destruction of lymph node architecture, only slight tendency to pleomorphism with a moderate peristence or prevalence of lymphocytes. Most of the lymphocytes are of the small variety although some medium sized lymphocytes may be present but without frequent mitoses. It is in this subdivision that occasionally one may have to make the diagnosis of Hodgkin's disease in the absence of Sternberg-Reed cells. In this group the word typical would refer mainly to the important element of Sternberg-Reed cells. The occurrence of large mono- or binucleated cells with plasma-like nuclei in 11 biopsies was noted. This finding may be interpreted to favor the new-growth theory. Similarly, the importance of mitoses in reticulo-endothelial cells points in the same direction; namely, to the neoplastic nature of Hodgkin's disease. (With reproductions of photo-micrographs.)—*Hodgkin's Disease, A Pathologic Classification, S. R. Bersack, Am. J. Clin. Path., May, 1943, 13: 253.*—(*J. S. W.*)

Radiation Pneumonitis.—That inflammation of the lung frequently follows therapeutic irradiation of the chest is now generally recognized. Roentgenograms at first show increased radiolucency which is soon followed by increased density starting at the hilum and spreading to involve most of the lung in three or four weeks. In most instances a slow regression follows the maximum reaction and in the course of weeks or months the lung reassumes a normal appearance. The presence or degree of reaction cannot be predicted from the amount of radiation given.

On the basis of postmortem and experimental findings radiation pneumonitis is divisible into mild, marked and late stages. Early reactions in animals include dilatation and engorgement of capillaries, often oedema and lymphectasia and, in some cases, petechial haemorrhages. A slight cellular infiltration may also occur, and patchy atelectasis and emphysema are often seen. Minor changes in the bronchial epithelium represent the first indication of cell damage. If the radiation is not excessive the cells soon return to normal; if radiation is heavy a more severe reaction follows a latent period of weeks, the epithelium being columnar or cuboidal, single or many layered. Keratinization and calcification may be present and varying degrees of anaplasia. The alveolar walls almost always show increased cellularity following enough radiation to produce marked congestion. Alveolar macrophages appear in the spaces and giant cells may be present. After heavier doses of radiation the epithelial lining cells become prominent. The more striking degree of anaplasia of the alveolar epithelium is seen in man rather than in animals, whereas the reverse is true of the bronchial epithelium. Pulmonary consolidation, often seen following irradiation, cannot be clearly considered a direct effect; lowered tissue resistance probably increases the chances of secondary infection. The fibrosis seen in late stages may be due to intercurrent infection and functional changes in the lung resulting from obstruction of bronchioles, atelectasis, emphysema and impaired blood supply rather than to the specific effect of the radiation, although experimental observations reveal some evidences of collagen degeneration and some perivascular and peribronchial fibrosis following irradiation of the lungs of animals. There is no definite evidence that the pleura is especially sensitive to radiation. The blood vessels in animals are often oedematous and, after heavier doses, may show some endothelial thickening; medial fibrosis has been described after heavy doses, as well as late degenerative changes. Vascular changes in man cannot be attributed to irradiation in view of the fact that similar changes are often present in non-irradiated lungs of comparable age.—*Effects of Radiation on Normal Tissues. V. Effects on the Respiratory System, S. Warren, Arch. Path., November, 1942, 34: 917.*—(*D. G. F.*)

Bronchial Adenoma.—Since adenoma of the bronchus was established as an entity by Wessler and Rabin in 1932, about 150 cases have been reported. Bronchial adenomata are found in 6 to 10 per cent of all bronchial neoplasms. Eighty per cent of the patients with bronchial adenoma were less than forty years of age. Seventy per cent of the patients were females. The bronchial adenoma produces a slowly progressive bronchial obstruction. Attacks of pulmonary infection with long healthy intervals are characteristic. Haemoptysis is seen in about two-thirds of the cases. The diagnosis is usually ascertained by bronchoscopy and biopsy. The tumor is benign; it has, however, a damaging effect on the lungs: usual complications are bronchiectasis, suppurative pneumonitis, lung abscess, empyema. The treatment consists in local bronchoscopic removal. Because of frequent local recurrence and extrabronchial extension, lobectomy or pneumonectomy is indicated in some cases. The case histories of 4 patients with bronchial adenoma are given. In all of them the tumor was removed locally with the aid of the bronchoscope.—*Bronchial Adenoma, T. Lowry, Journal-Lancet, October, 1943, 63: 324.*—(*G. C. L.*)

Bronchial Adenoma.—Transverse sections made just above the bifurcation of the trachea and through the region of the stem bronchi were prepared from 23 foetuses and infants, the former varying in age from seven months to maturity and the latter up to three months, in an attempt to demonstrate the similarity of infantile structures to the histological findings in bronchial adenoma. At these stages the bronchial epithelium is delicate; the cells lining the glandular acini are rather haphazardly distributed within their limiting membranes and are ragged in outline, while a few immature glands consist of simple ag-

gregations of formative cells. This picture resembles one which has been seen in a bronchogenic tumor. The blood vessels are thin-walled resembling sinuses and are distributed mostly in the submucosa. These vascular characteristics are present to an even greater degree in the neighboring and often contiguous lymphoid tissue. The stroma of these nodes is slight and irregular, blood and lymphoid cells may mingle without evidence of mural separation, and germinal centres are absent. The lymphoid tissue may be present within the walls of the bronchi. The cellular pattern and vascularity of these lymphoid deposits may also be simulated by bronchogenic adenoma. Since bronchial mucous glands occur deep between the cartilage rings, while lymphadenoid tissue is found within the tracheal and bronchial walls as well as around them, tumors which might arise from these structures could be expected to be either intra- or extramural. These findings are compatible with those of Womack and Graham, and of Harris and Schattenberg.—*Histologic Analogy of Bronchial Adenoma to Late Prenatal and Early Postnatal Structures, W. H. Harris, Jr., Arch. Path., January, 1943, 35: 85.*—(*D. G. F.*)

Bronchial Adenoma.—In sections from the bronchi of 10 adults stained with the Masson's trichrome stain, scattered groups of cells containing acidophilic granules were found in the acini and ducts of the bronchial glands but not among the ciliated surface epithelial cells. These cells have the features characteristic of the oncocytes (Hamperl) or pycnocytes (Zimmermann) found in certain bronchial adenomata. They occur in small, widely-spaced groups and contain no mucin, nor do the granules blacken in ammoniacal silver nitrate as do those of the similar cells in gastro-intestinal carcinoids. Photographic comparison of the cells with those of 3 bronchial adenomata showed a nuclear structure comparable in size and nucleolar arrangement though the tumor cells were smaller and with less regular granules. No such cells were found in the bronchi of 3 mice and 2 human foetuses. The findings suggest that these cells are a possible source of these bronchial tumors. Even where the cells of these tumors are not faithful reproductions of the oncocytes, as is true of the majority, there is no other cell in the bronchus or surrounding lung which can be considered a source since all of these are very different from the tumor cells.—*Cellular Origin of Bronchial Adenoma, A. P. Stout, Arch. Path., June, 1943, 35: 803.*—(*D. G. F.*)

Alveolar Cell Tumor.—A case is reported of a thirty-nine year old male complaining of cough, loss of weight, weakness and epigastric distress. On admission to the hospital there was epigastric tenderness, and slightly harsh breath sounds were heard over both apices. X-ray examination revealed gastroenteroptosis and the lungs were seen to be studded with round or oval areas of increased density, most pronounced near the hila. The patient became progressively worse and eventually died at home six months after the onset of his illness. At autopsy the lungs were found to be voluminous and firm and were studded with firm yellowish tumor nodules up to one cm. in diameter; pneumonic lesions were present in the surrounding lung tissue. There were metastatic nodules in the mediastinal and periaortic lymph nodes, liver and kidneys. The gastrointestinal tract was normal. Microscopic examination of the tumor revealed the alveoli to be well preserved in most foci, and to be lined with one or more layers of cuboidal or partly cylindrical tumor cells. There was occasional papillary growth into the lumina of the alveoli and mitotic figures were frequent. The alveolar walls showed some connective tissue thickening with occasional infiltration by mononuclear cells and fibroblasts. In some areas the tumor growth was more irregular, resembling adenocarcinoma. The lumina contained debris, desquamated tumor cells and phagocytes; it was at times difficult to distinguish between the two types of cells, and transitional stages could be found. There was no evidence of bronchiolar or bronchial involvement although

the latter showed some chronic inflammatory changes. The origin of the tumor appeared to be multiple and primary in the alveolar walls. Since a cuboidal alveolar lining is present only in early foetal life and is never present in the normal adult lung, the tumor may have arisen from the perivascular "septal" cells, probably of mesenchymal origin. These cells may, under various pathological and experimental conditions, enlarge and increase in number becoming more and more cuboidal and forming an alveolar lining. Some of these cells may become converted into phagocytes. In acute and subacute processes they may desquamate and disappear, while in more chronic processes, such as in chronic progressive pneumonia in sheep, they may develop into large multiple adenomata. The lining cells may persist in sclerosed areas or may give rise to a malignant growth, the alveolar cell tumor. This line of development is a possibility, but in actual fact neither the epithelial nor the mesenchymal origin of the alveolar cell tumor can be proved. No special aetiology for the tumor has as yet been established. A review of this subject in another journal includes a survey of the literature. The tumor is felt to occur more commonly than has been previously indicated. —*Primary Multiple Alveolar Cell Tumor of the Human Lung: Report of a Case, K. Neubuerger, J. Thoracic Surg., June, 1941, 10: 557; Alveolar Cell Tumor of the Human Lung, K. T. Neubuerger & E. F. Geever, Arch. Path., April, 1942, 33: 551.*—(*D. G. F.*)

Pulmonary Asbestosis and Carcinoma.—A review of the literature on the association of pulmonary asbestosis and carcinoma revealed that there are at least 19 known cases (including the 3 herein reported) of asbestosis associated with primary pulmonary carcinoma. In 4,137 autopsies from 1918 to 1938, 45 cases of pulmonary carcinoma were recognized in the author's laboratory, an incidence of 1.08 per cent. Asbestosis was diagnosed 8 times, silicosis 17 times. Pulmonary carcinoma was found in 4 of the 8 instances of asbestosis and twice in the 17 silicotic cases. Three of the cases of carcinoma associated with asbestosis are reported in the present paper, the fourth having been previously published. The criteria for the diagnosis of pulmonary asbestosis were fibrosis of the lung and the presence of asbestosis bodies. Case 1 showed pigmentation and fibrosis of lungs (asbestosis); bronchiectasis; fibrous pleural adhesions and squamous cell carcinoma (probably carcinoma of bronchus) involving right lung, pleura, pericardium and thoracic wall. Case 2 showed pulmonary asbestosis and carcinoma of the lung (left lower lobe), compressing the eighth and ninth intercostal and the left vagus nerves. Case 3 revealed pulmonary asbestosis (microscopically); purulent bronchitis and bronchiolitis; and bronchogenic carcinoma (right lung) with metastasis to hilar and preaortic lymph nodes, liver, adrenal and gastric mucosa and also an infarct in the spleen. The first case had worked in an asbestos factory for five years and the second case for twenty years. The history in the third case was rather incomplete and failed to reveal contact with asbestos. It has been stated that advanced asbestosis "may lead to bronchial epithelial metaplasia of a type encountered in other locations where cylindrical epithelium may give rise to squamous cell carcinoma." Metaplastic changes of bronchial mucosa were observed by the author 4 times in a series of 44 consecutive autopsies, studied with special care from this point of view. Such metaplastic changes (illustrated by photomicrograms) were seen in cases with various pulmonary lesions. None of these 4 cases presented any deposit of foreign material in the lungs. These facts seem to indicate that neither from statistical calculations nor from purely morphological studies is there any reliable answer to the question whether pulmonary asbestosis has to be considered as an aetiological factor in pulmonary carcinoma. However, in the author's laboratory the incidence of the association of the two conditions is remarkably high.—*The Co-Incidence of Primary Carcinoma of the Lungs and Pulmonary Asbestosis, Analysis of Literature*

and Report of Three Cases, F. Homburger, Am. J. Path., September, 1943, 19: 797.—(J. S. W.)

Cancer and Pulmonary Tuberculosis.—The association of cancer of the lung and tuberculosis is subject to numerous interpretations concerning the pathogenicity, frequency and localization. In 1810 Bayle for the first time pointed out the coexistence of the two diseases. Rokitansky in 1846 suggested that there was an antagonism between tuberculosis and cancer and this opinion has been dogmatically repeated throughout the ensuing years. The present general opinion is that tuberculous patients seldom have cancer but more frequently patients with cancer have tuberculosis. The two diseases may be coincidental and develop separately or there may be a causative relation between them. In some patients with cancer of the lung there may be seen in the X-ray films cavernous lesions which resemble tuberculosis and in these same individuals tubercle bacilli may be demonstrated in the sputum. In some patients with pulmonary tuberculosis the number of tubercle bacilli in the sputum may be markedly decreased as the bronchus draining the tuberculous area becomes obstructed by a cancer. The roentgen appearance of the hemithorax which shows an opacity with mediastinal retraction, paralysis of the diaphragm and diminution of the intercostal spaces in a lung previously known to have tuberculous lesions strongly suggests the concomitant development of cancer. Radiographic demonstration of destructive lesions of the ribs further confirms a diagnosis of cancer. Roentgen studies by means of lipiodol bronchograms which demonstrate an obstructing lesion in the bronchus characteristic of carcinoma, or tomograms which show the same condition, or the actual demonstration of a tumor shadow may also be seen; but the final and indisputable point of diagnosis is the microscopical demonstration of tubercle bacilli and tumor cells in the sputum. In some cases the diagnosis of tuberculosis may be made in a patient with carcinoma of the lung because of the presence of tubercle bacilli in the sputum. However, such bacilli may be present in the sputum because of the neoplastic destruction of the lung which liberates tubercle bacilli from a hitherto inactive tuberculous lesion. It is quite unlikely that a tuberculous infection and cancer of the lung would begin simultaneously. One case is reported in which a cancer developed in a tuberculous cavity. The tuberculous process was very old and certainly preceded the development of the carcinoma. Microscopical examination of the sputum may disclose giant cells of various types. Some of these are typical of pulmonary tuberculosis; others are the multinucleated plasma cells which may be found in the sputum of patients with unresolved bronchopneumonia, and these cells probably originate in the alveoli; the third type of giant cells are the tumor cells with atypical morphology and staining qualities. In those cases of concomitant cancer and pulmonary tuberculosis one can find cells corresponding to each of these three types. The giant cells which may be found in carcinoma of the lung are: (*1*) definite tumor cells which are large in size and have multiple nuclei but because of atypical appearance and staining qualities should be considered neoplastic; (*2*) giant cells which are nonspecific in character and correspond to those seen in chronic pulmonary infections; (*3*) giant cells which are typical of those found in tuberculosis.—*Cáncer y tuberculosis pulmonar (el problema de las células gigantes del pulmón), H. A. Ardao, P. Purriel & J. F. Cassinelli, Arch. de tisiol. y pneum., 1943, 2: 3.*—(*A. A. E.*)

Endothelioma of Pleura.—The tumor commonly referred to as endothelioma of the pleura is a relatively rare malignant neoplasm about which there is a great divergence of opinion. It was first described in 1870 by E. Wagner, as a tubercle-like lymphadenoma. Its incidence is about 1.1 cases per 1,000 autopsies and it occurs most frequently between the ages of forty to sixty years. The right and left pleura are affected with equal frequency but the ratio of females to males is

1:1.8. The clinical picture consists of pain in the affected chest, dry cough, rapid loss of energy and increasing dyspnoea, hardly relieved by pleural tap or other means. Diagnostically, histological examination of the exudate is of little value, but rapidly accumulating, increasingly haemorrhagic fluid and the finding of great resistance to the needle during its passage through the pleura are significant. The characteristic postmortem findings are: replacement of all or most of the affected pleura by a mold of irregularly thick, pinkish-gray, on the surface nodular tissue, cartilage-like in consistency; collapsed but not invaded homolateral lung; and usually absence of metastases. The histological picture consists of nests of neoplasia surrounded by much collagenous stroma and composed of alveoli of different sizes which are lined usually by one layer of medium sized, generally uniform, epithelial cells. Hyaline, *corpora amylacea*-like bodies are characteristic though not always found. Most probably this cancer takes its origin from the endothelial cells which line the pleural cavities. The simple name "pleuroma" is suggested to avoid the ambiguities occasioned by other designations.—*Endothelioma of the Pleura, With Report of Two Cases, A. Saccone & A. Coblenz, Am. J. Clin. Path., April, 1943, 13: 186.*—(*J. S. W.*)

Pneumonectomy.—The only hope of cure for the patient with bronchogenic carcinoma is surgical removal of the tumor, which usually means total pneumonectomy. Total pneumonectomy offers a complete cure for the patient with extensive but unilateral suppurative disease of the lung. In suppurative disease bronchoscopic aspiration should be done a few hours before the pneumonectomy to decrease the possibility of a spill-over during the operation. The operative technique is discussed. The mortality in the young patient should be low whether the operation is for carcinoma or for suppurative disease. The mortality will probably remain fairly high in the elderly patient with carcinoma associated with other complicating diseases. Twenty patients are reported upon whom pneumonectomy was performed: one patient was operated on for multiple lung abscesses, 6 for bronchiectasis, 13 for carcinoma. Of the patients operated on for carcinoma, one died of infection, 2 died of metastasis within a year.—*Total Pneumonectomy, J. Johnson, Surg., Gynec. & Obst., April, 1943, 76: 460.*—(*G. C. L.*)

Dysgerminoma with Tuberculoid Reaction.—Two cases of dysgerminoma of the ovary in young white women are reported. In both cases examination of the specimen removed at operation revealed a tuberculoid stromal reaction, in one case with the formation of numerous miliary lesions closely resembling tubercles and in the other with lymphocytes, epithelioid cells and giant cells of the Langhans type. These cells are felt to be inflammatory rather than neoplastic in origin; the pseudo-tubercles were usually associated with the peripheral fibrosis, often at some distance from the tumor. It is possible that their formation is stimulated by some product of the tumor. Schiller demonstrated lipoids in dysgerminomata and suggested that they may be similar to those of the tubercle bacillus but this has not yet been substantiated.—*Tuberculoid Reaction in Ovarian Dysgerminoma, E. L. Heller, Arch. Path., May, 1943, 35: 674.*—(*D. G. F.*)

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